

**K. E. Dixon  
Beckett Bronze Co., Inc.  
P.O. Box 2425  
Muncie, Indiana 47307**

Re: Registered Construction and Operation Status,  
**035-12716-00008**

Dear Ms. Dixon:

The application from Beckett Bronze, received on November 9, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following bronze foundry, to be located at 106 East 20<sup>th</sup> Street, Muncie, Indiana, 47302, Indiana, is classified as registered:

- (a) The following electric induction furnaces:
  - (1) One (1) Inductotherm furnace rated at 300 KW, constructed in 1982, and exhausting through the Wheelabrator baghouse;
  - (2) One (1) Inductotherm furnace rated at 250 KW, constructed in 1980, and exhausting through the Wheelabrator baghouse;
  - (3) One (1) Ajax furnace rated at 250 KW, constructed in 1983, and exhausting through the Seneca baghouse;
  - (4) One (1) Inductotherm furnace rated at 175 KW, constructed in 1974, and exhausting through the Wheelabrator baghouse;
  - (5) One (1) Inductotherm furnace rated at 350 KW, constructed in 1997, and exhausting through the Wheelabrator baghouse; and
  - (6) Two (2) Inductotherm furnaces each rated at 75 KW, constructed in 1993, and exhausting through the Wheelabrator baghouse.
- (b) One (1) cleaning operation, constructed in 1913, with a maximum throughput of 0.18 tons per hour, and exhausting through the Seneca baghouse;
- (c) One (1) sand handling process, constructed in 1913, with a maximum throughput of 0.51 tons per hour; and
- (d) One (1) casting operation, constructed in 1980, producing a maximum of 650 pounds per hour of finished product.

The whole plant currently powered through one (1) 750 KW transformer, therefore the power input to the source shall be limited to the capacity of the transformer.

The following conditions shall be applicable:

- 1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
  - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- 2) Pursuant to 326 IAC 6-3-2 (Process Operations):
  - (a) the particulate matter (PM) from the electric induction furnaces shall be limited to 5.62 pounds per hour for a maximum process rate of 1.6 tons per hour;
  - (b) the particulate matter (PM) from the cleaning operation shall be limited to 1.3 pounds per hour for a maximum process rate of 0.18 tons per hour;
  - (c) the particulate matter (PM) from the sand handling operation shall be limited to 2.61 pounds per hour for a maximum process rate of 0.51 tons per hour;
  - (d) the particulate matter (PM) from the casting operation shall be limited to 1.93 pounds per hour for a maximum process rate of 0.325 tons per hour;

based on the following equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The potential emissions without the use of control equipment for the above mentioned units are all less than the respective allowable limits of 6-3-2. Therefore, no control equipment is needed to comply with these limits.

This registration supersedes any previous air approvals issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section  
Office of Air Quality  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, increase the capacity of the plant's transformer above 750 KW, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

LMW/EVP

cc: File - Delaware County  
Delaware County Health Department  
Air Compliance - Jim Thorpe  
Permit Tracking - Janet Mobley  
Air Programs Section- Michelle Boner  
Office of Enforcement

<b>Registration Annual Notification</b>
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This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

<b>Company Name:</b>	<b>Beckett Bronze</b>
<b>Address:</b>	<b>106 East 20<sup>th</sup> Street</b>
<b>City:</b>	<b>Muncie</b>
<b>Authorized individual:</b>	<b>K. E. Dixon</b>
<b>Phone #:</b>	<b>765-282-8034</b>
<b>Registration #:</b>	<b>035-12716-00008</b>

I hereby certify that Beckett Bronze is still in operation and is in compliance with the requirements of Registration 035-12716-00008.

<b>Name (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

## **Indiana Department of Environmental Management Office of Air Quality**

### **Technical Support Document (TSD) for a Registration**

#### **Source Background and Description**

**Source Name:** Beckett Bronze Co. Inc, Foundry  
**Source Location:** 106 E. 20<sup>th</sup> St, Muncie, IN 47302  
**County:** Delaware  
**SIC Code:** 3369  
**Operation Permit No.:** 035-12716-00008  
**Permit Reviewer:** Lisa M. Wasiowich/ EVP

The Office of Air Quality (OAQ) has reviewed an application from Beckett Bronze Co. Inc. relating to the construction and operation of a bronze foundry.

#### **Permitted Emission Units and Pollution Control Equipment**

The source consists of the following permitted emission units and pollution control devices:

- (a) The following electric induction furnaces:
  - (1) One (1) Inductotherm furnace rated at 300 KW, constructed in 1982, and exhausting through the Wheelabrator baghouse;
  - (2) One (1) Inductotherm furnace rated at 250 KW, constructed in 1980, and exhausting through the Wheelabrator baghouse;
  - (3) One (1) Ajax furnace rated at 250 KW, constructed in 1983, and exhausting through the Seneca baghouse; and
  - (4) One (1) Inductotherm furnace rated at 175 KW, constructed in 1974, and exhausting through the Wheelabrator baghouse;
- (b) One (1) cleaning operation, constructed in 1913, with a maximum throughput of 0.18 tons per hour, and exhausting through the Seneca baghouse;
- (c) One (1) sand handling process, constructed in 1913, with a maximum throughput of 0.51 tons per hour; and
- (d) One (1) casting operation, constructed in 1980, producing a maximum of 650 pounds per hour of finished product.

The whole plant currently powered through one (1) 750 KW transformer, therefore the power input to the source shall be limited to the capacity of the transformer.

### Unpermitted Emission Units and Pollution Control Equipment

The source also consists of the following unpermitted facilities/units:

- (a) The following electric Induction furnaces:
  - (1) One (1) Inductotherm furnace rated at 350 KW, constructed in 1997, and exhausting through the Wheelabrator baghouse; and
  - (2) Two (2) Inductotherm furnaces each rated at 75 KW, constructed in 1993, and exhausting through the Wheelabrator baghouse.

Based on the emission calculations (Appendix A, page 2 of 2), item # 1 and item # 2 have potential emissions of 6.43 tons per year and 2.74 tons per year, respectively, and item # 2 can qualify as an exemption level unit.

### Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) Registration, issued on April 28, 1983.

All conditions from previous approvals were incorporated into this permit.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
Wheelabrator Baghouse	Inductotherm furnaces	11	26" x 35"	25,000	10 degrees above outside temperature
Seneca Baghouse	Ajax furnace, cleaning operation	7 3/4	19" x 22"	12,000	10 degrees above outside temperature

### Enforcement Issue

- (a) IDEM is aware that the following equipment has been constructed and operated prior to receipt of the proper permit:
  - (1) One (1) Inductotherm furnace rated at 350 KW, constructed in 1997, and exhausting through the Wheelabrator baghouse.
- (b) This equipment is subject to enforcement action because the potential emissions are greater than 5 tons per year of particulate matter and it was constructed without notifying IDEM. The two (2) Inductotherm furnaces, each rated at 75 KW, that were constructed in 1993, are not subject to enforcement action because they have a potential to emit less than 5 tons per year of particulate matter.
- (c) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

### Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on September 15, 2000, with additional information received on November 9, 2000.

### Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 and 2).

### Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	22.40
PM-10	15.57
SO <sub>2</sub>	0.0
VOC	0.0
CO	0.0
NO <sub>x</sub>	0.0

HAP's	Potential To Emit (tons/year)
Lead	0.41
TOTAL	0.41

Note: The potential PM emissions are determined based on the plant's transformer capacity of 750 KW.

- (a) Potential emissions (as defined in 326 IAC 2-1.1-1(16)) of particulate matter are less than 25 tons per year, but greater than 5 tons per year. Therefore, pursuant to 326 IAC 2-5-5, a registration is required. The source has volunteered to further limit particulate emissions through the use of a baghouse to control emissions from the electric induction furnaces and the cleaning operation.
- (b) Fugitive Emissions  
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

### Actual Emissions

No previous emission data has been received from the source.

## Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
electric induction furnaces	0.55	0.55	0.0	0.0	0.0	0.0	0.41
cleaning operation	0.01	0.01	0.0	0.0	0.0	0.0	0.0
sand handling operation	8.04	1.21	0.0	0.0	0.0	0.0	0.0
casting operation	0.02	0.02	0.0	0.0	0.0	0.0	0.0
Total Emissions	8.62	1.79	0.0	0.0	0.0	0.0	0.41

## County Attainment Status

The source is located in Delaware County.

Pollutant	Status
PM-10	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Delaware County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Delaware County has been classified as attainment or unclassifiable for all pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions  
Since this source uses pure bronze ingots as raw material and does not process any outside scrap metal it is not considered a secondary metal production facility and therefore is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR 52.21, or 326 IAC 2-3. Since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.



## Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	8.62
PM10	1.79
SO <sub>2</sub>	0.0
VOC	0.0
CO	0.0
NO <sub>x</sub>	0.0

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.
- (b) These emissions were based on the application submitted by the company.

## Part 70 Permit Determination

### 326 IAC 2-7 (Part 70 Permit Program)

The total emissions indicated in this Registration R-035-12716-00008, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

## Federal Rule Applicability

- (a) This source is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.130, Subpart M), because it is a foundry which uses bronze ingots for producing its product and is not a secondary bronze production plant. Also, 40 CFR 60.130 states that furnaces from which molten bronze is cast into the shape of finished products, such as foundry furnaces, are not considered to be affected facilities.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 61) applicable to this source.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 20 and 40 CFR art 63) applicable to this source.

## State Rule Applicability - Entire Source

### 326 IAC 2-4.1-1 (New Source Toxics Control)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control) because the source has PTE of any HAP less than 10 tons per year and PTE of any combination of HAPs less than 25 tons per year. Therefore, 326 IAC 2-4.1-1 does not apply.

### 326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it is located in Delaware County and has the potential to emit less than one hundred (100) tons per year of particulate matter (PM, PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), and oxides of nitrogen (NO<sub>x</sub>).

### 326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

### State Rule Applicability - Individual Facilities

#### 326 IAC 6-3-2 (Process Operations)

- (a) The particulate matter (PM) from the electric induction furnaces shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

$$E = 4.10 * (1.6)^{0.67} \\ E = 5.62 \text{ pounds per hour}$$

The potential emissions for this facility without the use of controls is 13.72 tons per year or 3.13 pounds per hour. This is less than the allowable emissions therefore, no control equipment is required to comply with 326 IAC 6-3-2. The source has volunteered to use a baghouse to further reduce particulate emissions.

- (b) The particulate matter (PM) from the cleaning operation shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

$$E = 4.10 * (0.18)^{0.67} \\ E = 1.30 \text{ pounds per hour}$$

The potential emissions for this facility without the use of controls is 0.62 tons per year or 0.14 pounds per hour. This is less than the allowable emissions therefore, no control equipment is required to comply with 326 IAC 6-3-2. The source has volunteered to use a baghouse to further reduce particulate emissions.

- (c) The particulate matter (PM) from the sand handling operation shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

$$E = 4.10 * (0.51)^{0.67} \\ E = 2.61 \text{ pounds per hour}$$

The potential emissions for this facility without the use of controls is 8.04 tons per year or 1.84 pounds per hour. This is less than the allowable emissions therefore, no control equipment is required to comply with 326 IAC 6-3-2. The source has volunteered to use a baghouse to further reduce particulate emissions.

- (d) The particulate matter (PM) from the casting operation shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

$$E = 4.10 * (0.325)^{0.67} \\ E = 1.93 \text{ pounds per hour}$$

The potential emissions for this facility without the use of controls is 0.02 tons per year or 0.004 pounds per hour. This is less than the allowable emissions therefore, no control equipment is required to comply with 326 IAC 6-3-2. The source has volunteered to use a baghouse to further reduce particulate emissions.

#### 326 IAC 11-1 (Emission Limitations for Specific Types of Operations : Existing Foundries)

This rule establishes emissions limitations for foundry cupolas. This source is not subject to this rule because there are no cupolas existing at this foundry.

#### Conclusion

The operation of this bronze foundry shall be subject to the conditions of the attached proposed **Registration 035-12716-00008.**

**Appendix A: Process Particulate Emissions**

**Company Name:** Beckett Bronze Co., Inc.  
**Address City IN Zip:** 106 East 20th Street, Muncie, IN 47302  
**CP:** 035-12716  
**Plt ID:** 035-00008  
**Reviewer:** Lisa M. Wasiowich/ EVP  
**Date:** December 13, 2000

**Electric Induction Furnaces**

tons collected	average throughput (tons/hr)	maximum throughput (tons/hr)	hours operated	control efficiency	potential emissions (tons/year)
1.59	0.35	1.60	4896	96.00%	13.72

potential emissions = tons collected \* (max. throughput/ave. throughput) \* (8760 hours per year/ actual hours operated) \* (1/ control efficiency)  
 Note: The maximum throughput is based on a maximum source capacity of 0.0021 tons/hour per KW and a maximum transformer

**Lead Emissions**

Pb emissions = 3% of potential emissions from electric induction furnaces

Pb = 0.41 tons per year

**Cleaning Operation**

tons collected	hours operated	control efficiency	potential emissions (tons/year)
0.34	4896	99.00%	0.62

potential emissions = tons collected \* (8760 hours per year/ actual hours operated) \* (1/ control efficiency)

**Sand Handling Operation**

pollutant	maximum throughput (tons/hour)	emission factor (lb/ton)	potential emissions (tons/year)
PM	0.51	3.6	8.04
PM-10	0.51	0.54	1.21

potential emissions = maximum throughput (tons/hour) \* emission factor (lb/ton) \* 8760 hours per year / 2000 lbs per ton

**Appendix A: Process Particulate Emissions**

**Company Name:** Beckett Bronze Co., Inc.  
**Address City IN Zip:** 106 East 20th Street, Muncie, IN 47302  
**CP:** 035-12716  
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**Reviewer:** Lisa M. Wasiowich/ EVP  
**Date:** December 13, 2000

**Casting Operations**

pollutant	maximum throughput (tons/hour)	emission factor (lb/ton)	potential emissions (tons/year)
PM	0.325	0.015	0.02
PM-10	0.325	0.015	0.02

potential emissions = maximum throughput (tons/hour) \* emission factor (lb/ton) \* 8760 hours per year / 2000 lbs per ton

**Total Emissions**

Pollutant	Potential Emissions (tons/yr)
PM	22.40
PM-10	15.57
Pb	0.41

**Emissions from CWOP/OWOP Equipment**

furnace capacity (kW)	total potential emissions (tons/year)	total maximum throughput (tons/hr)	furnace maximum throughput (tons/hr)	potential emissions (tons/year)
350	13.72	1.60	0.75	6.43
75	13.72	1.60	0.16	1.37
75	13.72	1.60	0.16	1.37

potential emissions = (total potential emissions / total maximum throughput) \* furnace maximum throughput

Note: The maximum throughput is based on a maximum source capacity of 0.0021 tons/hour per KW and a maximum transformer